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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/026,387	12/21/2001	Timo J. Salo	RSW920010207US1	1045

7590

05/03/2004

A. Bruce Clay
IBM Corporation T81/503
P.O. Box 12195
Research Triangle Park, NC 27709

EXAMINER

LY, ANH

ART UNIT

PAPER NUMBER

2172

DATE MAILED: 05/03/2004

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Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/026,387

Applicant(s)

SALO ET AL.

Examiner

Anh Ly

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 21 December 2001.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-10 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-10 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 21 December 2001 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

1. This Office Action is response to Applicants' communications filed on 12/21/2001.
2. Claims 1-10 are pending in this application.

Claim Rejections - 35 USC § 103

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

4. This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

5. Claims 1-10 are rejected under 35 U.S.C. 103(a) as being unpatentable over Pub. No.: US 2003/0163439 A1 of Hankin et al. (hereinafter Hankin) in view of US Patent No. 6,704,745 issued to Della-Libera et al. (hereinafter Della-Libera).

With respect to claim 1, Hankin teaches a plurality of related objects (related objects of persistent objects in the links of relationships: Page 6, section 0165 and Page 13, section 0217); and

a plurality of corresponding links, each said link corresponding to one of said objects, each said link persisting state information for said corresponding object in an associated object table, and managing said junction table responsive to changing relationships with others of said related objects (links or relationships of related objects in a data model: Page 6, section 0165 and Page 13, section 0217; also see abstract and Page 1, sections 0013-0014 and Page 2, sections 0015-00118).

Hankin teaches the data model of mapping persistent object of the related objects in the object persistence management system, from which the relationships of objects or the links of the objects are many-to-many relationship (Page 3, section 0041, Page 4, section 0043 and Page 8, sections 0173 and 0174; also see figs. 2 and 3) and the relationship changing may be performed by addition or deletion and removal of the relationships may be accepted or changed until the transaction has been committed (Page 10, section 0188 and Pages 14 and 15, sections 0242 and 0243) and data model where the relationships of related objects or the links of objects are defined. Hankin does not explicitly teach a junction table storing relationships between said related objects.

However, Della-Libera teaches a junction table storing the objects having a many-to-many relationship of the two base database tables (see fig. 15 and col. 13, lines 15-22).

Therefore, it would have been obvious to a person of ordinary skill in the art at the time the invention was made to combine the teachings of Hankin with the teachings of Della-Libera so as to have a intermediary table or junction table using to form the association between the entities in the two table via two primary keys of the two tables storing in the junction table. The motivation being to have a table for storing the many-to-many relationships of related objects and optimizing the performance and increasing performance and user response time and consistent with the in-memory changes.

With respect to claim 2, Hankin teaches a counter-operation management protocol performed in said corresponding links for removing conflicted state information in said corresponding links without persisting said conflicted state information in said junction table (Page 10, section 0188, Page 14, section 0242 and Page 15, section 0243 and a data model defined the relationships or links of objects: Page 3, section 0042 and Page 4, section 0043).

With respect to claim 3, Hankin teaches wherein each of said corresponding links comprises a state management operations buffer, said buffer storing directives for adding selected key-pair entries to and removing selected key-pair entries from said junction table (data stored in buffer and primary keys and foreign key relationship in the data model: Page 13, section 0215 and Page 16, section 0255 and page 3, section 0042).

With respect to claim 4, Hankin teaches wherein said counter-operation management protocol comprises an interface through which operations in said buffer and corresponding counter-operations in associated buffers of related links can be identified and removed, each said counter-operation specifying a junction table management operation for a particular key-pair entry in said associated buffer which is opposite to an operation in said buffer which specifies a junction table management operation also for said particular key-pair entry (data stored in buffer and primary keys and foreign key relationship in the data model: Page 13, section 0215 and Page 16, section 0255 and page 3, section 0042).

With respect to claim 5, Hankin teaches detecting a relationship change with a related object (related objects of persistent objects in the links of relationships: Page 6, section 0165 and Page 13, section 0217); and

performing said stored directive only if an opposite directive has not been stored in a buffer associated with said related object (links or relationships of related objects in a data model: Page 6, section 0165 and Page 13, section 0217; also see abstract and Page 1, sections 0013-0014 and Page 2, sections 0015-00118 and Page 13, section 0215 and page 16, section 0255).

Hankin teaches the data model of mapping persistent object of the related objects in the object persistence management system, from which the relationships of objects or the links of the objects are many-to-many relationship (Page 3, section 0041, Page 4, section 0043 and Page 8, sections 0173 and 0174; also see figs. 2 and 3) and the relationship changing may be performed by addition or deletion and removal of the

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relationships may be accepted or changed until the transaction has been committed (Page 10, section 0188 and Pages 14 and 15, sections 0242 and 0243) and data model where the relationships of related objects or the links of objects are defined. Hankin does not explicitly teach storing a directive in a buffer, said directive specifying a management operation for changing said relationship in a junction table.

However, Della-Libera teaches a junction table storing the objects having a many-to-many relationship of the two base database tables (see fig. 15 and col. 13, lines 15-22).

Therefore, it would have been obvious to a person of ordinary skill in the art at the time the invention was made to combine the teachings of Hankin with the teachings of Della-Libera so as to have a intermediary table or junction table using to form the association between the entities in the two table via two primary keys of the two tables storing in the junction table. The motivation being to have a table for storing the many-to-many relationships of related objects and optimizing the performance and increasing performance and user response time and consistent with the in-memory changes.

With respect to claim 6, Hankin teaches wherein said storing step comprises the step of storing a directive in said buffer which specifies one of adding or removing a key-pair entry in said junction table (Page 10, section 0188, Page 14, section 0242 and Page 15, section 0243 and the relationship of primary keys with foreign keys in the data model: Page 3, section 0042 and page 4, section 0043).

With respect to claim 7, Hankin teaches wherein said performing step comprises the steps of: performing said specified adding or removing of said key-pair entry only if a

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corresponding opposite directive specifying a respective removing or adding of said key-pair entry is not detected in said buffer of said associated object; and responsive to detecting said corresponding opposite directive, removing both said directive and opposite directive from both said buffers (the manipulation transaction has been committed before accepting the changing of the relationship in the database system:

Page 10 section 0188 Page 14, section 0242 and page 15, section 0243).

Claim 8 is essentially the same as claim 5 except that it is directed to a machine-readable storage rather than a method, and is rejected for the same reason as applied to the claim 5 hereinabove.

Claim 9 is essentially the same as claim 6 except that it is directed to a machine-readable storage rather than a method, and is rejected for the same reason as applied to the claim 5 hereinabove.

Claim 10 is essentially the same as claim 7 except that it is directed to a machine-readable storage rather than a method, and is rejected for the same reason as applied to the claim 5 hereinabove.

Contact Information

6. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Anh Ly whose telephone number is 703 306-4527 or via E-Mail: ANH.LY@USPTO.GOV. The examiner can normally be reached on 7:30 AM - 4:00 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, John Breene, can be reached on 703 305-9790. The fax phone number for the organization where this application or proceeding is assigned is 703 746-7239.

Any response to this action should be mailed to:


Commissioner of Patents and Trademarks


Washington, D.C. 20231

or faxed to: Central Office (703) 872-9306 (Central Official Fax Number)

Hand-delivered responses should be brought to Crystal Park II, 2121 Crystal Drive, Arlington, VA, Fourth Floor (receptionist).

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is 703 308-6606 or 703 305-3900.

ANH LY 
APR. 27th, 2004


JEAN M. CORRIELUS
PRIMARY EXAMINER